

Multiscale Analysis of Market Prices

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Résumé

It has been well known since the pioneering work of Mandelbrot that market price fluctuations are poorly modeled and described by discrete time random walks or continuous diffusions driven by standard Brownian motions. In this talk we analyze financial time series such as oil or bitcoin prices. The data exhibit very interesting multiscale correlation structures that can be characterized by a time-varying volatility and Hurst exponent and that can be used to identify regime shifts for the market prices. This is a joint work with Knut Sølna (UC Irvine).